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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/789,277
Filing Date: February 27, 2004
Appellant(s): MIELKE, SIEGFRIED

Darlene P. Condra
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/9/07 appealing from the Office action mailed 2/12/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The amendment after final rejection filed on 5/11/07 has been entered.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. However, please note the additional new ground(s) of rejection.

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner: the §112, second paragraph, rejection of claims 1-8.

NEW GROUND(S) OF REJECTION

Claims 1 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by DE1210302.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE1210302 in view of the Mechanical Engineers' Handbook.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

DE1210302	SCHMIDT	2-1966
4,662,2047	BERCHEM	5-1987

KUTZ, MYER "Mechanical Engineers' Handbook" (1986), pp. 920 - 924

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE1210302 in view of Berchem.

Regarding claim 1, DE1210302 (hereafter '302) teaches a process for manufacturing a cooling channel piston (Abb. 4) which has a cooling channel (h; Abb. 3, Abb. 4) approximately in the area behind a ring belt (the area outside cooling channel h in Abb. 4, in which the piston rings are to be accommodated), where a piston blank is shaped at least partially in a forging process, characterized in that specifically in the approximate area of a top land (a; Abb. 1), at

least one circumferential shoulder (e) is formed, behind the at least one shoulder a recess is introduced from the side (Abb. 2) and then the at least one shoulder is reshaped by means of deformation such that the recess is closed by the at least one shoulder to create the cooling channel (h; Abb. 3).

'302 fails to teach the at least one circumferential shoulder projecting laterally from the piston blank.

Berchem teaches forming at least one circumferential shoulder (2) projecting laterally (i.e. approximately 90 degrees) from a piston blank (Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the at least one circumferential shoulder of '302 such that it projects laterally outwardly (i.e. at an angle of approximately 90 degrees from central section (d) of the piston blank shown in Abb. 1), as taught by Berchem, so as to facilitate formation of the recess from the side more efficiently, since access thereto would be improved.

Regarding claim 6, '302 teaches the at least one shoulder is rigidly connected to the piston blank or to another shoulder forming a contact area (Abb. 1).

Regarding claims 7 and 8, '302 teaches the contact area is reworked and the shoulder is furnished with sealing means (f; embodiment of Abb. 6) in the contact area with respect to the piston blank.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over '302/Berchem as applied to claim 1 above, and further in view of the Mechanical Engineers' Handbook.

DE '302/Berchem discloses the invention cited above, wherein the shoulder is either squeezed or bent. However, the exact means for deforming are not known. Pages 920-924 of the Mechanical Engineers' Handbook discuss conventional cold-working processes for squeezing and bending including thus claimed by Appellant. A person skilled in the art is able to select the one most appropriate. Regarding claims 2-5, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have deformed the shoulder of DE '302 by forging, swaging, driving through a hollow form, and rolling, in light of the teaching of the Mechanical Engineers' Handbook, in order to bend or squeeze the shoulder effectively. See MPEP 2183 (selection of equivalents recognized in the art for the same purpose supports a case of prima facie obviousness).

NEW GROUND(S) OF REJECTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by DE1210302.

Regarding claim 1, DE1210302 (hereafter '302) teaches a process for manufacturing a cooling channel piston (Abb. 4) which has a cooling channel (h; Abb. 3, Abb. 4) approximately in the area behind a ring belt (the area outside cooling channel h in Abb. 4, in which the piston rings are to be accommodated), where a piston blank is shaped at least partially in a forging

process, characterized in that specifically in the approximate area of a top land (a; Abb. 1), at least one circumferential shoulder (e) is formed, behind the at least one shoulder a recess is introduced from the side (Abb. 2) and then the at least one shoulder is reshaped by means of deformation such that the recess is closed by the at least one shoulder to create the cooling channel (h; Abb. 3). Note that since the shoulder (e) is formed at an outward angle with respect to the center section (d) of the piston blank (rather than parallel thereto), the shoulder may be considered to project "laterally" from the piston blank as claimed. The term "laterally" does not require the shoulder and piston blank to be disposed at a 90 degree angle with respect to each other.

Regarding claim 6, '302 teaches the at least one shoulder is rigidly connected to the piston blank or to another shoulder forming a contact area (Abb. 1).

Regarding claims 7 and 8, '302 teaches the contact area is reworked and the shoulder is furnished with sealing means (f; embodiment of Abb. 6) in the contact area with respect to the piston blank.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over '302 as applied to claim 1 above, and further in view of Mechanical Engineers' Handbook.

DE '302 discloses the invention cited above, wherein the shoulder is either squeezed or bent. However, the exact means for deforming are not known. Pages 920-924 of the Mechanical Engineers' Handbook discuss conventional cold-working processes for squeezing and bending including thus claimed by Appellant. A person skilled in the art is able to select the one most appropriate. Regarding claims 2-5, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have deformed the shoulder of DE '302 by forging,

swaging, driving through a hollow form, and rolling, in light of the teaching of the Mechanical Engineers' Handbook, in order to bend or squeeze the shoulder effectively. See MPEP 2183 (selection of equivalents recognized in the art for the same purpose supports a case of prima facie obviousness).

(10) Response to Argument

(A) Regarding Rejection of Claims 1-8 under 35 USC 112, 2nd paragraph.

The amendment after final filed 5/1/07 overcomes the 35 USC 112, 2nd paragraph rejection. Therefore, that rejection has been withdrawn.

(B) Regarding Rejection of Claims 1 and 6-8.

Regarding argument I that Berchem does not disclose reshaping the shoulder (2) to close a recess to form the cooling channel: Appellant contends that the shoulder (2) or (7) in Berchem only forms an annular gap (6), and there is no connection of the free end of the shoulder (2, 7) to enclose the gap (6) in Berchem to provide a closed cooling channel. Appellant concludes, therefore, that even if one could combine the teaching of Berchem with DE '302, the claimed process would not be provided since the gap (6) formed in Berchem is not a closed channel. In response, the examiner notes that it is the teaching of DE'302 that explicitly discloses the process of reshaping the shoulder to close a recess to form the closed cooling channel. Berchem teaches forming at least one circumferential shoulder (2) projecting laterally from a piston blank. As set forth in the rejection above, employing a laterally extending shoulder on the piston blank of DE '302 would make the formation of the recess behind the shoulder more efficient, since the access to that portion of the piston would be greatly improved.

Regarding argument II that there is no suggestion to combine the teaching of Berchem to the teaching of DE '302 to meet the claimed process: Appellant contends that reference DE '302 already discloses forming a cooling channel (h) between the inner and outer shaft parts. Therefore, appellant concludes there would be no motivation to add the shoulder (2) or (7) to either of the inner or outer shafts of DE '302 to form an annular gap in addition to the cooling channel (h), and the piston reference DE '302 would require major modification, reconstruction or design to accommodate the teachings of Berchem. In response, the examiner notes that the motivation to combine these two references is not to form an additional cooling channel. The combination is merely modifying the angle of the shoulder of DE'302 to project laterally from the piston blank as taught by Berchem so as to more easily access the portion behind the shoulder and to facilitate formation of the recess.

Regarding argument III, that claim 8 is also patentable because the seal (f) in DE '302 is not located on a shoulder as featured in claim 8: Appellant contends that the seal (f) is along the vertical inner wall (d) of the piston. Berchem does not show or disclose a seal. In response, Berchem has not been cited to show or disclose a seal. The seal is taught by DE '302 as (f) in the embodiment depicted in Abb. 6. Furthermore, since the seal (f) is in direct contact with shoulder portion (e) after the shoulder portion (e) is deformed against center section (d) of the piston blank, the structure meets the claimed limitation "wherein the shoulder is furnished with sealing means in the contact area with respect to the piston blank." Appellant appears to be construing the language of claim 8 too narrowly, as it is noted that both the claim and the specification fail to explicitly disclose exactly where the sealing means is to be positioned (i.e. in the shoulder portion (5), in the piston blank (1), or in/on some portion of both). The relevant portions of the

specification (the substitute specification filed 1/16/07) pertaining to the sealing means are the last two sentences of paragraph [0006], and the sixth sentence of paragraph [00017]. The language "the shoulder is furnished with sealing means in the area where it makes contact with the piston blank" (in paragraph [0006]) is not limited to the structure of a sealing means disposed on or within the shoulder. As long as the seal contacts the shoulder when the shoulder is moved into contact with the piston blank, the shoulder may be considered "furnished" with a sealing means in the contact area.

(C) Regarding Rejection of Claims 2-5.

Regarding the rejection of claims 2-5 under 35 USC 103(a) as being unpatentable over DE '302 in view of Berchem and further in view of the Mechanical Engineer's Handbook, Appellant does not separately argue the claimed features, but instead relies on their dependency to claim 1, and the alleged allowability thereof. In response, the examiner maintains that the rejections of claim 1 under both §102 and §103 are proper.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)** above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of

rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

/John C Hong/

John C Hong

Primary Examiner

jh

December 19, 2007

A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:

NATHAN J. NEWHOUSE
SUPERVISORY PATENT EXAMINER
ACTING DIRECTOR TC3700
for

Frederick R. Schmidt, Director TC3700

Conferees:

/David Bryant/

David Bryant

SPE AU3726

/Marc Jimenez/

Marc Jimenez
TQAS TC3700